June 21, 2004

Mr. Kevin Turner
**USEPA REGION V**
Emergency Response Branch
8588 Rt. 148
Marion, IL 62959

Mr. Steven Faryan
**USEPA REGION V**
Emergency Response Branch
HSE-5J
77 West Jackson Blvd.
Chicago, IL 60604-3590

Clayton Project No. 15-03095.14-006

**Subject: Response to USEPA Letter dated June 2, 2004**
**Regarding Comments to ROST Investigation Report and Work Plan**
**Hartford, Illinois – ILR000128249**
**Illinois EPA# 1190505040 – Madison County**

Dear Messrs. Turner and Faryan:

Clayton Group Services, Inc., on behalf of the Hartford Working Group (HWG), has reviewed the comments provided under United States Environmental Protection Agency (USEPA) cover dated June 2, 2004. The USEPA and the Illinois Environmental Protection Agency (Agencies) addressed the CPT/ROST™ Investigation Report and Work Plan (Investigation Report), dated April 8, 2004 and prepared by Clayton. The comments are summarized in this document with accompanying responses.

*Comment #1*

Observations were made as to the ROST™ waveform signature depicting the presence of light range, mid range, and heavy range hydrocarbons. It is recommended that in order to efficiently answer product removal design criteria the following statements need to be addressed:

a.) Refine the boundaries between light, mid, and heavy range contaminants.
b.) Identify the subsurface conditions that exist in the various contaminant zones.
c.) Correlate the CPT/ROST data with "ground-truth" field sampling results.

*Response*

a.) In order to further refine the boundaries between the light, mid, and heavy range hydrocarbons, Clayton has proposed as part of the Work Plan (page 7-4) that Simulated Distillation Analysis of product samples be conducted on both the new and existing monitoring wells present in the Village of Hartford that contain free phase hydrocarbon (FPH). It is Clayton's opinion, based on experience at other petroleum hydrocarbon impacted sites, that the design of the remediation system will be primarily based upon the geology of the area and the amount of product present, not the type of product present. Observations made to date of the product indicate that it is refined product and not crude oil. Therefore, any effort to further refine the boundaries between the light, mid, and heavy range hydrocarbons, beyond that proposed in Work Plans previously submitted to the Agencies, is not considered necessary for the design process of the remediation system.

b.) The subsurface conditions that exist in the various contaminant zones are identified in the cross sections (Figures 5-1 thru 5-4) that are provided in the April 8, 2004 Investigation Report / Work Plan. Again, in Clayton's experience, further refinement of subsurface conditions, beyond that proposed in Work Plans previously submitted to the Agencies, is not considered necessary for the design process of the remediation system.

c.) The CPT/ROST™ data is qualitative in nature and cannot be compared quantitatively with analytical soil or groundwater sample results. However, the CPT/ROST™ data was "ground-truthed" by being compared qualitatively to several different field-tests; such as comparing the CPT/ROST™ log to Geoprobe logs (Section 4.4 of the Investigation Report), comparing "Shake Test"/ Oil-in-Soil dye results to ROST data (Section 4.5 of the Investigation Report / Work Plan), and a qualitative comparison of the ROST data to soil and groundwater samples analyzed for selected parameters (Sections 4.5 and 4.6 of the Investigation Report / Work Plan). Additional "ground-truthing" will occur with the installation of the thirty multi-point vacuum monitoring probes, as outlined in Clayton's Technical Memorandum dated May 6, 2004, (see attached Figure 1), which will allow for further confirmation of the areas where free phase hydrocarbon is present.

*Comment #2*

Additional piezometers should be added to determine seasonal variations in groundwater flow, to better understand basic and seasonal flow of groundwater, and ultimately provide information related to fate and transport of both perched and hydraulically connected contaminated, as-well-as consideration for NAPL fate and transport findings.

*Response*

It is Clayton's opinion that with the installation of 30 multi-point vacuum monitoring points, set in various locations and stratums throughout the Village of Hartford, as originally proposed in Clayton's Technical Memorandum Vapor Control System Upgrade Design (Technical Memo), dated May 6, 2004, (see attached Figure 1) and as modified in this document based on a teleconference held between the Hartford Working Group and the Agencies on June 16, 2004, in addition to the installation of the 53 monitoring wells also set in various locations and stratums throughout Hartford, as identified in Figure 7-1 of the Investigation Report / Work Plan, that a sufficient amount of wells will be in place to provide a better understanding of basic and seasonal flow of groundwater within Hartford and surrounding areas. The attached Figure 1 replaces Figure 3-1 in the May 6, 2004 Technical memo.

*Comment #3*

It is USEPA's understanding that the proposed wells inside the dashed line of Figure 7-1 are to be 4-inch wells and those outside the dash are 2-inch wells. The larger wells are being installed with the option to convert them to extraction wells if needed. Though the USEPA applauds the foresightfulness of this proposal, we are also concerned that there is not yet enough information to know if the proposed new wells inside the FPH would have the correct placement (both vertically and horizontally) to adequately remove subsurface product.

It is our opinion that the installation of piezometers or small gauge well clusters should be considered more before larger sized wells are installed. Small gage well clusters or multiport wells can be used economically to further refine the CSM in support of product removal at the Site. These wells can be used in tandem with inexpensive field-based methods for the observation of contaminant behavior, which could facilitate a better understanding of the observed impact of river flocculations or the increase in odor related events.

*Response*

In Clayton's opinion, enough information is known to allow for the correct placement and installation of new wells inside the FPH. However as discussed in the June 16, 2004 teleconference, we will proceed with the installation of the 30 multi-point vacuum monitoring points, as identified in the May 6, 2004 Technical Memorandum, (see attached Figure 1) prior to the installation of the 53 monitoring wells, as identified in Figure 7-1 of the Investigation Report / Work Plan. The information gained from the installation of these multi-point vacuum monitoring points will be evaluated to aid in the placement of the 4-inch wells within the area of free phase hydrocarbon. Minor

modifications to the multi-point vacuum monitoring points will be made to make them more suitable for water/product gauging. These modifications include increasing the size of the polyvinyl chloride (PVC) screens and risers from ¾-inch to 1-inch inside diameter, also (depending on the thickness of the stratum) varying the length of the multi-point screens from 1.0 foot to a more appropriate screen length, and in an unconfined condition increasing the depth of the monitoring point in the Main Sand to below the water table. (See attached Figures 2 and 3). The attached Figures 2 and 3 replace Figures 2-2 and 2-3 in the May 6, 2004 Technical Memo.

*Comment #4*

Within the 4-inch monitoring wells, real-time flow sensor devices (in lieu of slug tests) are recommended to be used as a means to monitor and refine our understanding of the changes in flow conditions, which could impact the effectiveness of any product removal or treatment systems.

*Response*

Clayton acknowledges the Agency's recommendation and is currently researching various real-time flow sensor devices.

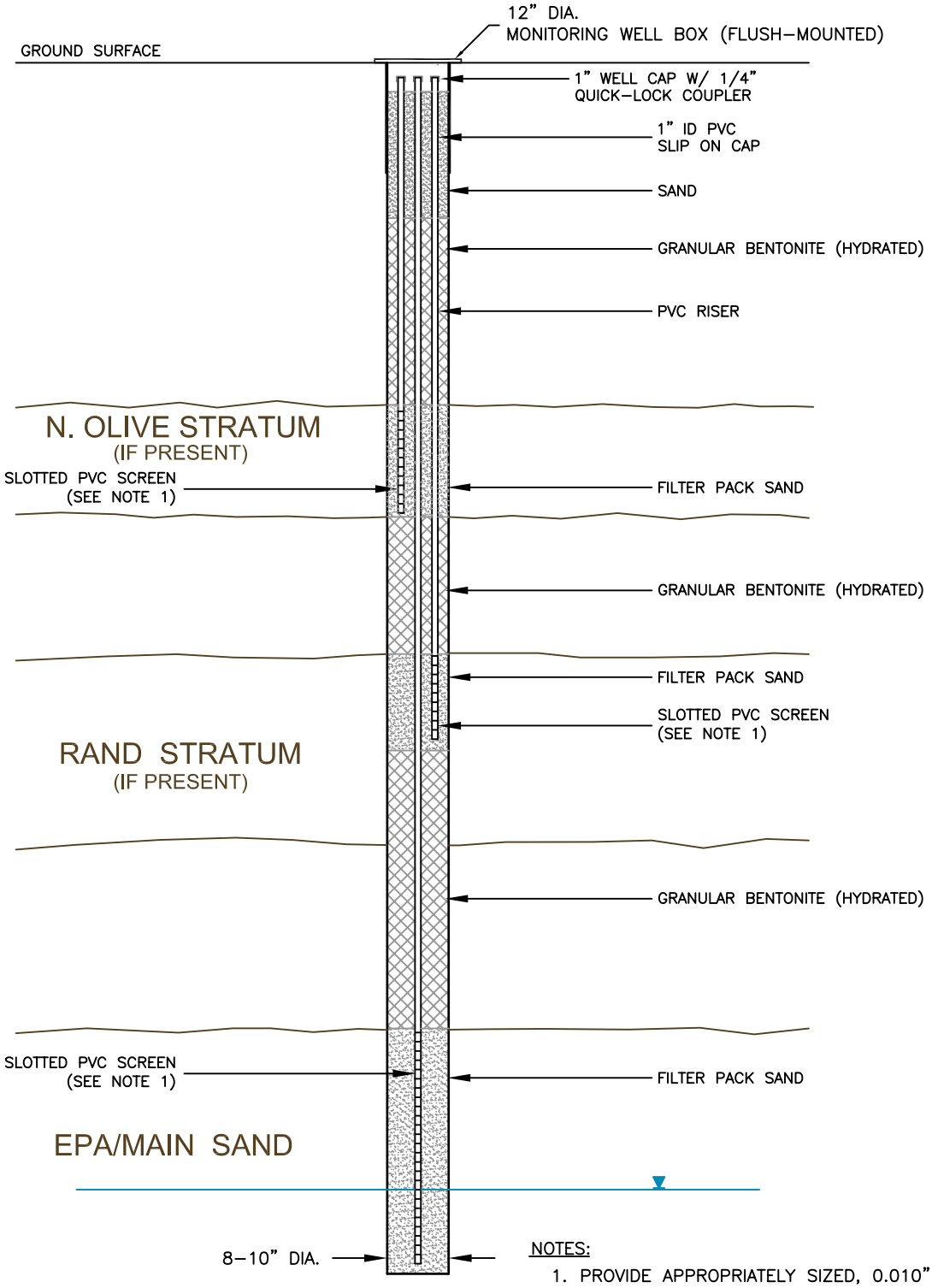
We are planning to begin installation of the multi-point vacuum monitoring points (small gauge well clusters) the week of July 12, 2004. We can discuss the above issues further during the July 1, 2004 meeting (or sooner), if necessary. Please contact me at (630) 795-3207 if you would like to discuss this before our July 1 meeting.

Sincerely,

**Monte M. Nienkerk, P.G.**
Senior Project Manager
Environmental Services

Enclosures:
Figure 1 – Proposed Multi-Point Vacuum Monitoring Probe Location Map
Figure 2 –Typical Multi-Point Vacuum Monitoring Probe Details (Confined)
Figure 3 – Typical Multi-Point Vacuum Monitoring Probe Details (Unconfined)

cc: Hartford Working Group
Tom Binz (TT EMI / USEPA) – 4 copies
Jim Moore (IEPA, Springfield) – 3 copies
Chris Cahnovsky (IEPA, Collinsville) – 2 copies
Robert Egan (USEPA, Region 5 – 1 copy)
Robert Howe (TT EMI/USEPA – 1 copy)
Dave Webb (Illinois DPH – 1 copy)




NOTES:

1. PROVIDE APPROPRIATELY SIZED, 0.010" SLOTTED PVC SCREEN WITH SAND FILTER PACK.
2. DEPTH OF BOREHOLE AND PLACEMENT OF WELL SCREEN MAY BE MODIFIED BASED ON SUBSURFACE CONDITIONS.

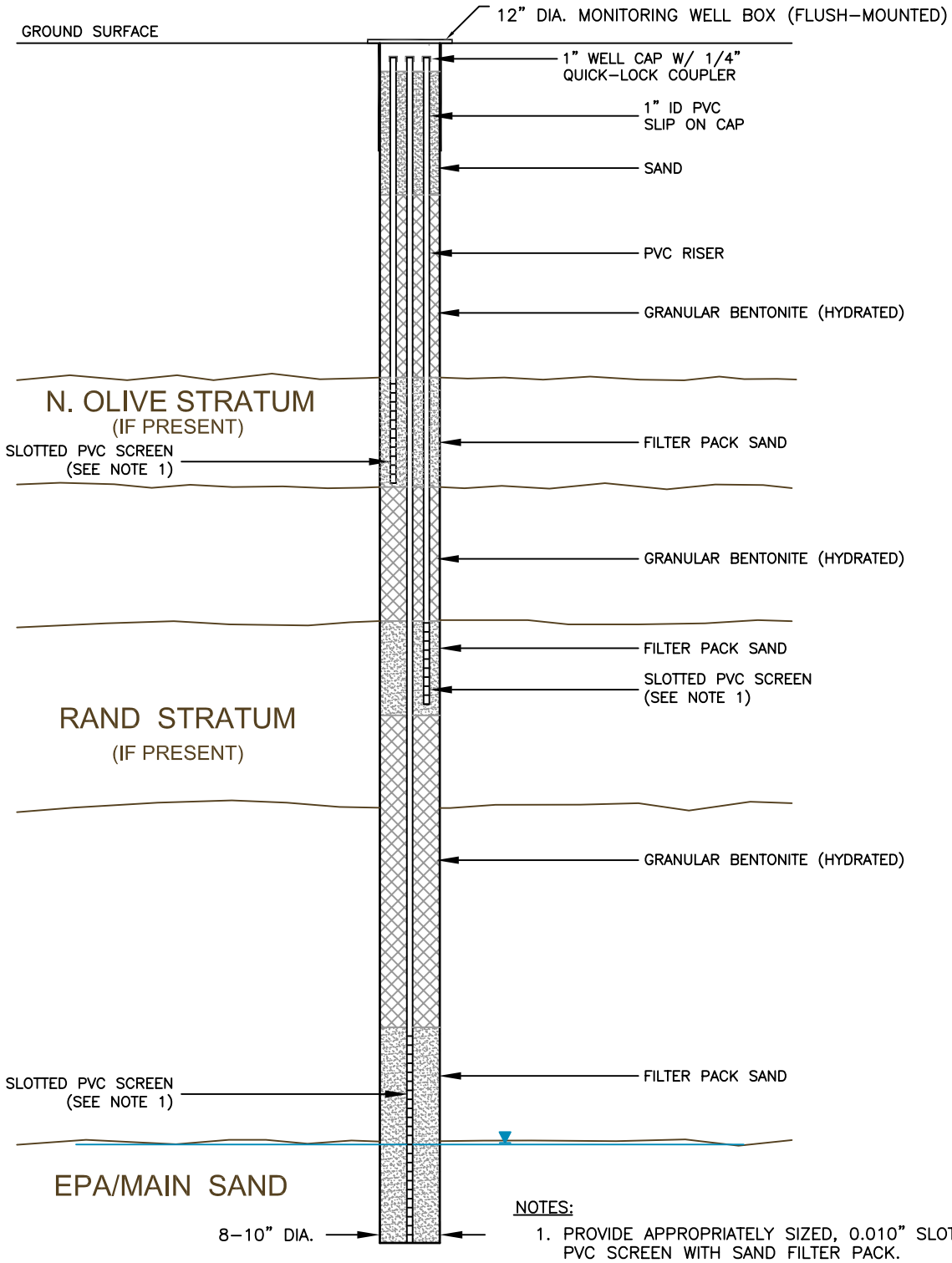
| | |
|---|---|
| CHECK BY | JGW |
| DRAWN BY | BCP |
| DATE | 6-18-04 |
| SCALE | NONE |
| CAD NO. | 0309513002B1 |
| PRJ NO. | 15-03095.13 |

TYPICAL MULTI-POINT VACUUM MONITORING PROBE
CONSTRUCTION DETAILS
(UNCONFINED CONDITIONS)

THE HARTFORD WORKING GROUP
HARTFORD, ILLINOIS

Clayton GROUP SERVICES

FIGURE
3

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TYPICAL MULTI-POINT VACUUM MONITORING PROBE CONSTRUCTION DETAILS
(CONFINED CONDITIONS)

THE HARTFORD WORKING GROUP
HARTFORD, ILLINOIS

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FIGURE
2

W. RAND AVE

W. ARBOR ST

W. BIRCH ST

E. BIRCH ST

(N. OLIVE)
(RAND)
(MAIN)
MP-29

MP-9S MP-9D
MP-8S MP-8D
MP-7S MP-7D
MP-5S MP-5D
MP-6S MP-6D
HSVE1 VCB-01

MP-30
(N. OLIVE)
(RAND)
(MAIN)

(N. OLIVE)
(RAND)
(MAIN)
MP-36

(N. OLIVE)
(RAND)
(MAIN)
MP-32

(N. OLIVE)
(RAND)
(MAIN)
MP-33

MP-31
(N. OLIVE)
(RAND)
(MAIN)

VCB-02 W. CHERRY ST VCB-03 VCB-04

MP-37 E. CHERRY ST

MP-34
(N. OLIVE)
(RAND)
(MAIN)

MP-35
(N. OLIVE)
(RAND)
(MAIN)

(N. OLIVE)
(RAND)
(MAIN)

(N. OLIVE)
(RAND)
(MAIN)
MP-42

N. OLIVE STREET

MP-38
(N. OLIVE)
(RAND)
(MAIN)

MP-39
(N. OLIVE)
(RAND)
(MAIN)

(N. OLIVE)
(RAND)
(MAIN)

MP-43

MP-12S MP-12D
MP-11S MP-11D

N. DELMAR AVENUE

MP-40
(RAND)
(MAIN)

MP-41
(N. OLIVE)
(RAND)
(MAIN)

(N. OLIVE)
(RAND)
(MAIN)

(N. OLIVE)
(RAND)
(MAIN)
MP-45

(N. OLIVE)
(RAND)
(MAIN)
MP-46

(N. OLIVE)
(RAND)
(MAIN)
MP-47

MP-44

VCB-05 W. DATE ST MP-10S MP-10D VCB-07 E. DATE ST VCB-08

VCB-06

MP-49
(RAND)
(MAIN)

MP-50
(RAND)
(MAIN)

N. MARKET STREET

MP-48
(N. OLIVE)
(MAIN)

MP-51
(N. OLIVE)
(RAND)
(MAIN)

MP-52
(RAND)
(MAIN)

(N. OLIVE)
(RAND)
(MAIN)
MP-53

(N. OLIVE)
(RAND)
(MAIN)
MP-54

(N. OLIVE)
(RAND)
(MAIN)
MP-55

VCB-09 E. ELM ST VCB-10 VCB-11

W. ELM ST

OLD ST. LOUIS AND ALTON ROAD

MP-56
(N. OLIVE)
(RAND)
(MAIN)

(N. OLIVE)
(RAND)
(MAIN)

MP-16D MP-15D MP-14D MP-13D
MP-16S MP-15S MP-14S MP-13S
VCB-12 E. FOREST ST
MP-57

W. FOREST ST

MP-54
(MAIN)

E. WATKINS ST

LEGEND:

- PROPOSED MULTI-POINT VACUUM MONITORING PROBE LOCATION (MP)
- (RAND) (MAIN) DENOTES IDENTIFIED STRATUMS ANTICIPATED TO BE SCREENED
- EXISTING VAPOR CONTROL BORING (VCB)
- EXISTING SOIL VAPOR MONITORING PROBE (MP)

NOTE: LOCATIONS SUBJECT TO MODIFICATION DEPENDENT UPON FIELD CONDITIONS (e.g. ACCESSIBILITY, UNDERGROUND UTILITIES...)

SCALE IN FEET
0 75 150 300

| | |
|---|---|
| CHECK BY | |
| DRAWN BY | BCP |
| DATE | 6-18-04 |
| SCALE | AS SHOWN |
| CAD NO. | 0309513002D1 |
| PRJ NO. | 15-03095.13 |

PROPOSED MULTI-POINT
VACUUM MONITORING PROBE
LOCATION MAP

THE HARTFORD WORKING GROUP
HARTFORD, ILLINOIS

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FIGURE 1